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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------------|
| 10/722,004 | 11/25/2003 | Steven K. Waisanen | 063740-9130 | 6977 |
| 23409 | 7590 | 03/09/2006 | EXAMINER | |
| MICHAEL BEST & FRIEDRICH, LLP 100 E WISCONSIN AVENUE MILWAUKEE, WI 53202 | | | | ROSENBERGER, RICHARD A |
| | | ART UNIT | | PAPER NUMBER |
| | | 2877 | | |

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/722,004 | WAISANEN, STEVEN K. | |
| | Examiner | Art Unit | |
| | Richard A. Rosenberger | 2877 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 November 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3/11/04; 1/23/06</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2877

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 4-6, 8-13, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bühler (US 4,535,699), Flab (US 6,314,650), and Miyahara (US 4,904,081).

As in claims 1, 10 and 18, Bühler in view of shows a track surveying system with a laser mounted on the rail system, with a survey car on the rail system for movement relative to the laser, with a detection device mounted on a “railroad track making or repairing machine” (column 3, lines 21-22).

In Bühler the laser must be accurately aligned with the desired reference line. It is known in the art, as shown by Flab, that this can be done using a self-leveling laser with inclinometer sensors and servo motors (Flab, column 1, lines 26-35). It would have been obvious to use such a self-leveling laser with a system such as shown by Bühler because this provides an automatic manner of obtaining a proper alignment of the laser beam use for the surveying. Bühler does not use an “image acquisition device” for “capturing an image” of the laser spot in order to determine the relative position of the detector on the “machine”. This is a known manner of conducting such laser-beam based surveying, however; see Miyahara, which used a camera to capture the image of a laser spot.

As in claims 2, 12, and 18, Miyahara shows it is known to conduct such surveying by projecting the laser onto a screen (4) and viewing the spot with an image acquisition device (5).

Miyahara shows it is known to detect the position of the laser spot (column 4, lines 54-58), but does not mention that this can be done by determining the centroid of the spot, as in claims 4 and 18. The use of the centroid as a measure of the position of a light spot is so well known that official notice is sufficient, and would have been obvious.

As in claim 5, the self-leveling means as shown by Falb includes a pivotable mounding and a motor; having the unit in a housing is at least obvious.

Having the “machine” of Bühler self-propelled, as in claim 6, 10, 11 would have been obvious because this would allow the “machine” to move without having to provide separate moving means.

Having the computer and other control means remote from the machine (claims 8, 9, and 19) would have been obvious because it is common in the art to send information to and from a remote location.

Bühler teaches presenting the results of the surveying in terms of “the distance covered by the machine” (column 2, lines 24-25). This at least clearly suggests including an encoder to determine this distance, as in claims 13. It would have been obvious, for convenience of data gathering, to make measurements at known, predetermined distance intervals, as in claim 20.

Mounting the receiver on any convenient type of car or other machine suitable for the desired survey would have been obvious (claims 16 and 17).

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bühler (US 4,535,699), Flab (US 6,314,650), and Miyahara (US 4,904,081) as applied to claim 2 above, and further in view of Beni et al (US 5,513,884).

Beni et al, similarly to Miyahara, uses an image acquisition device to capture the image of a laser beam projected onto a screen. Beni et al teaches that it is useful to include an optical filter in the system “to attenuate the effects of ambient light” (column 6, lines 53-57). It would have been obvious to use such a filter in the system of claim 2 to obtain this known benefit.

4. Claims 7, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bühler (US 4,535,699), Flab (US 6,314,650), and Miyahara (US 4,904,081) as applied to claim 2 above, and further in view of Plasser et al (US 3,750,299).

Plasser et al, in a similar system, teaches having the laser beam sensing means “laterally pressed ... against the grade rail of the track so as to indicate the actual position of the track ...”. This teaches the use of biasing means to ensure the position of the machine or other car is accurately known in order to ensure accurate measurements. The use of such biasing means to ensure accurate positioning g of the machine or other car on the track, as in claims 7, 14 and 15, would have been obvious for that reason.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard A Rosenberger whose telephone number is (571) 272-2428. The examiner can normally be reached on Monday through Friday during the hours of 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is

703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R. A. Rosenberger
3 March 2006

Richard A. Rosenberger
Primary Examiner